

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference =====	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/01426	International filing date (day/month/year) 01.04.2003	Priority date (day/month/year) 02.04.2002
International Patent Classification (IPC) or both national classification and IPC E21B27/00		
Applicant SPECIALISED PETROLEUM SERVICES GROUP LIMITED		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the opinion
II ☐ Priority
III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV ☐ Lack of unity of invention
V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI ☐ Certain documents cited
VII ☐ Certain defects in the international application
VIII ☐ Certain observations on the international application

Date of submission of the demand 27.10.2003	Date of completion of this report 28.06.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Dantine, P Telephone No. +31 70 340-3396 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/01426

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-12 as originally filed

Claims, Numbers

1-12 filed with telefax on 17.05.2004

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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International application No. **PCT/GB 03/01426**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1,10
	No: Claims	
Inventive step (IS)	Yes: Claims	1,10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1,10
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

In light of the documents cited in the international search report, it is considered that the invention as claimed in the independent claim 1 and corresponding method claim 10 meets the criteria mentioned in Article 33(1) PCT, i.e it appears to be novel, to involve an inventive step and to be industrially applicable.

The closest prior art is considered to be US 6.276.452 B which describes a downhole tool to break up and retrieve junk from a borehole.

The problem described in the application is to collect larger milled junk and prevent it from balling up at the scrapers (see description page 3 line 10 - 29).

The solution provided is by locating the projections used to break up the junk adjacent to the inlet ports. In this way, the junk is broken up to a size which will pass directly into the inlet ports to be caught in a trap.

Since none of the documents cited in the ISR teaches in that direction, claims 1 and 10 are considered to meet the requirements of Art. 33(2)-(4) PCT.

1 Claims

2

3 1. A downhole tool for collecting and retrieving junk
4 from a well bore, the tool comprising: a cylindrical
5 body attachable in a work string; a multi-faceted
6 surface comprising a plurality of projections
7 arranged at an end of the body for contacting with
8 and breaking up junk; and a plurality of inlet ports
9 through which the broken up junk passes into a trap
10 for collection, wherein each projection is located
11 between adjacent inlet ports.

12

13 2. A downhole tool as claimed in Claim 1 wherein the
14 projections each include a plurality of tungsten
15 carbide coated surfaces.

16

17 3. A downhole tool as claimed in any preceding Claim
18 wherein the tool further includes a sleeve located
19 around the body, the sleeve including filter means
20 for filtering debris from fluid passing there
21 through.

22

23 4. A downhole tool as claimed in Claim 3 wherein a trap
24 is provided in an annular space between the body and
25 the sleeve.

26

27 5. A downhole tool as claimed in any preceding Claim
28 wherein the ports have a flow path parallel to a
29 longitudinal axis of the tool.

30

31 6. A downhole tool as claimed in any preceding Claim
32 wherein each inlet port includes a valve.

14

- 1 7. A downhole tool as claimed in any one of Claims 3 to
2 6 wherein the tool includes a throat, the throat
3 being located adjacent to the projections and having
4 a diameter narrower than a diameter of the sleeve.
5
- 6 8. A downhole tool as claimed in any preceding Claim
7 wherein the cylindrical body includes an axial bore
8 to permit fluid flow through the work string.
9
- 10 9. A downhole tool as claimed in Claim 7 wherein the
11 tool includes one or more milling elements located
12 adjacent the throat and distal to the inlet ports.
13
- 14 10. A method of collecting and retrieving junk within a
15 well bore, comprising the steps:
16
- 17 (a) providing a multi-faceted contact surface on a
18 work string, the surface including a plurality
19 of projections and a plurality of inlet ports,
20 each projection being located between adjacent
21 inlet ports;
 - 22 (b) breaking up large pieces of junk by contact with
23 the surface;
 - 24 (c) collecting the broken-up junk through the inlet
25 ports; and
 - 26 (d) storing the broken-up junk in a trap adjacent
27 the inlet ports.
28
- 29 11. A method as claimed in Claim 10 wherein the method
30 includes the steps of providing a mill ahead of the
31 surface and jetting milled junk from the mill towards
32 the inlet ports.
33

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- 1 12. A method as claimed in Claim 10 or Claim 11 wherein
- 2 the method includes the step of operating one or more
- 3 valves at each inlet port to prevent the broken-up
- 4 junk from exiting the trap.
- 5

TOTAL P.05

AMENDED SHEET